User / Service Manual

Color Option

Chapter 0 General

Copyright

General notes:

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Attention : The following sign is used to mark up - that this is an important point !

Note: Please follow the notes shown in this text - it will help to cover all situations and keep your engine working.

If in the manual is used the name TTX 650 - it is as well meant the TTX 450 the Puma and Tiger or the S 45 !

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Chapter 1 Initiation

What is color option ?

The color option is used to print multi color using a special ribbon and a slightly modified standard printer. The printer is able to print coloured pictures by using a 4 color ribbon. The process is that way – printing the label with one color – moving back the label to the start position and printing the label again with the next color and so on.

Only three color are necessary to print a coloured picture – black as the forth color is used to print barcodes or text – reasoned by the matter that matching 3 color will never give you a solid black – its more a brown.

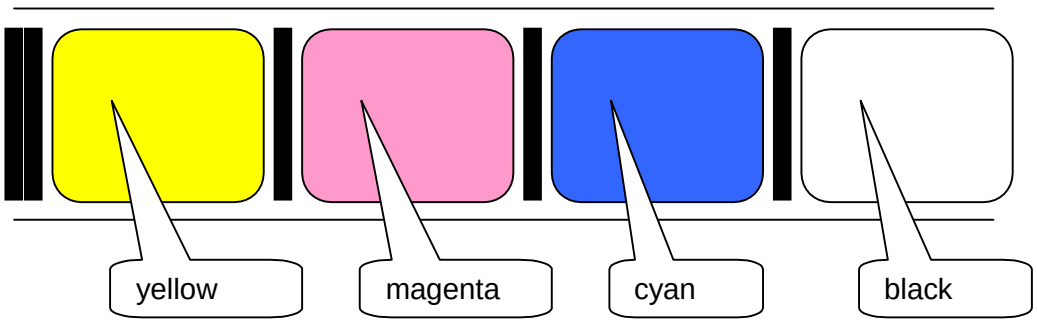
Given by the small differences the printer can still be used as a standard single color printer. The main difference between both applications is the handling of media and ribbon.

Ribbon

The ribbon can hold a minimum of one panel – up to more fields.

The color panel are separated with a special mark, so the printer is able to define which color is below the printhead and can be used. The mark is black and coded in a way the printer can react .

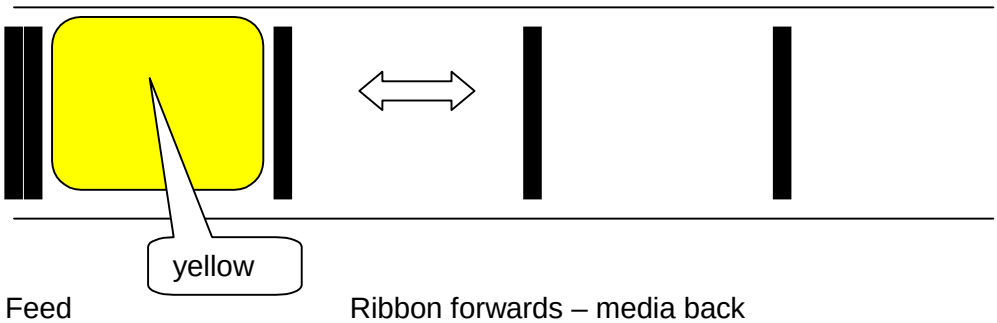
Positioning of the ribbon is done before starting the print job by the printer itself.



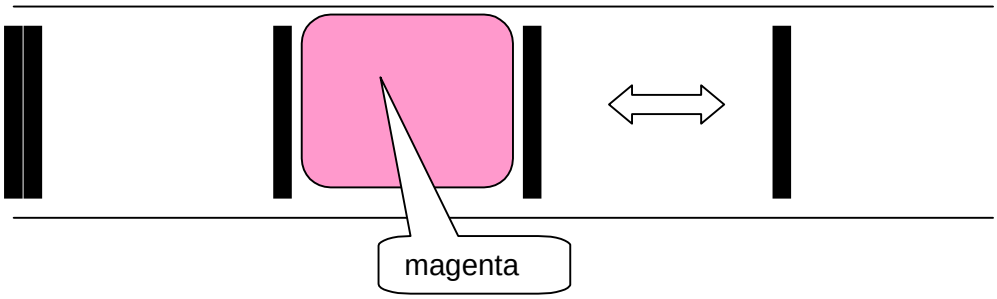
Media movement

The main difference to a single color printer is movement of media and ribbon – in the single color mode ribbon and media are moved forwards! Using the color option means ribbon moves forwards – media forwards and backwards until all used colours are printed to the label.

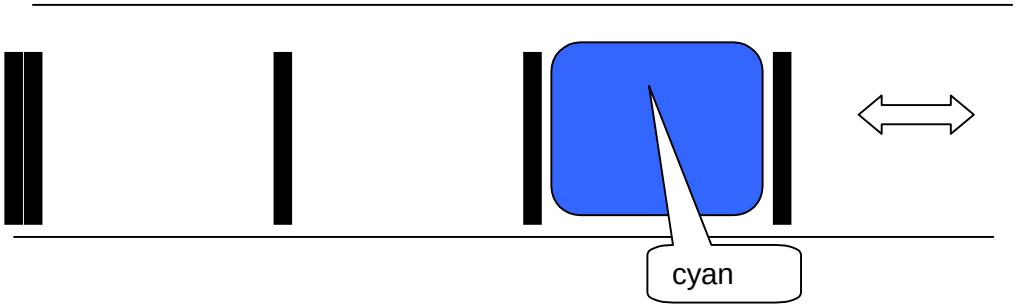
1. Feed Ribbon forwards – media back



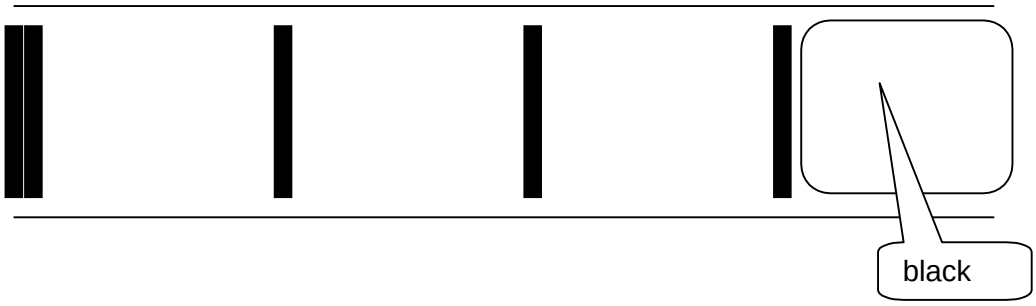
2. Feed Ribbon forwards – media back



3. Feed Ribbon forwards – media back



4. Feed Ribbon forwards – media forwards – print done

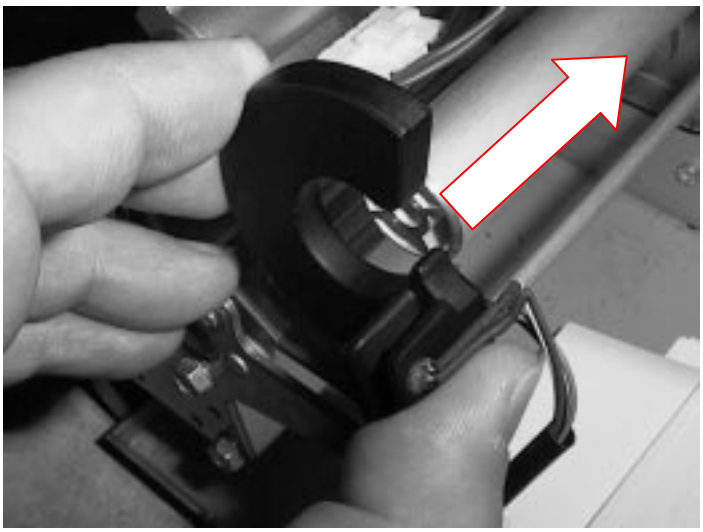


Unpack

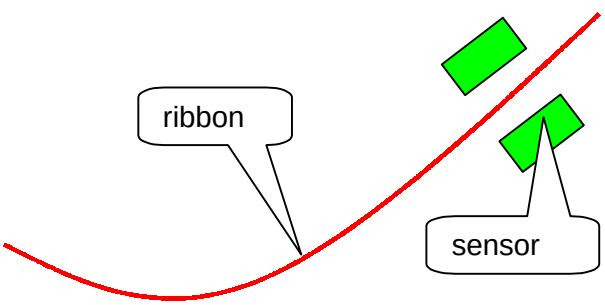
- remove packing parts - take care of documentation and parts
- remove option from packaging
- the option consists out of
  - a special sensor, mounted into a plastic cover
  - a special firmware (visible by reset after the first digit a C is shown i.e. 1C34)
  - a guiding part used to guide the media outside of the printer
  - SRAM card (if pictures should be printed, or the printer drivers are used)

Assemble Option

The option is sledded over the ribbon guiding axle and pushed back to the front plate of the printer



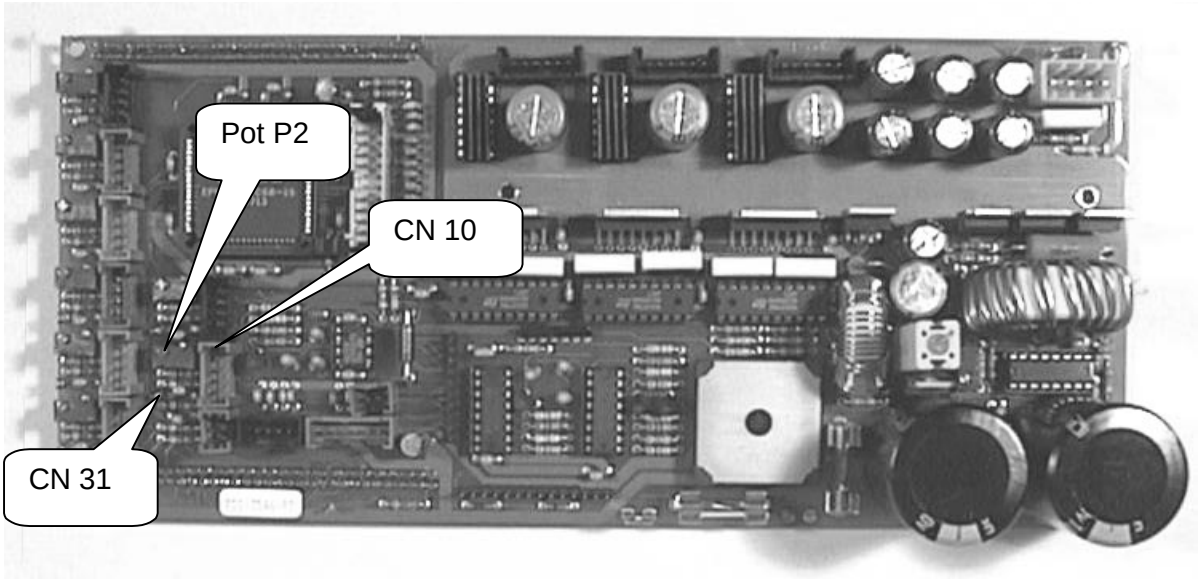
move the option in a way that the ribbon feeds through the two sensor parts



Connect the sensor to the I/O board

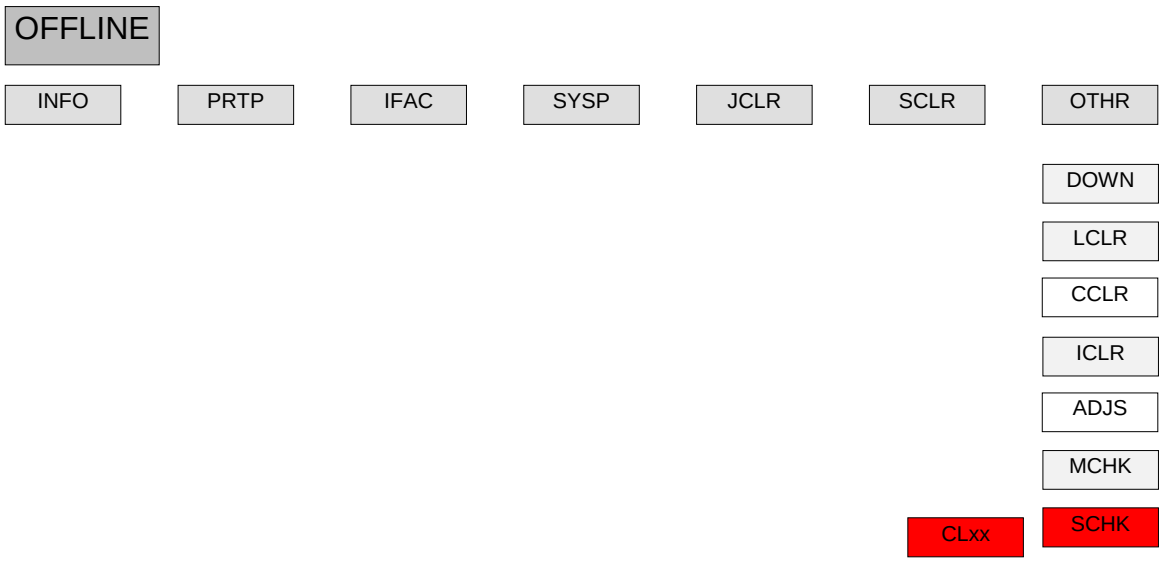
Move the cable through the hole in the front cover (media sensor is using the same) and connect the plug to CN 10 on the I/O board.
Use Pot P2 (see picture) to adjust the sensor in a way, that measured on CN 31 (see picture) a voltage of 0,18 V – 0,19 V shows up – with no ribbon in the sensor.

This should be done only by a service technician – unplug printer before from main power !



Check the sensor by using the menu point SCHK – and there point CLxx

Sensor	Display
Sensor blocked	CL 15
Sensor free	CL 0



Release

The color option is released for the printer TTX 450, Puma, S 45 – TTX 650, Lion and S 65. The option is not released for the other printer !

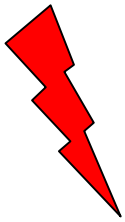
Reason for that limitation is given by the media forwards and backwards movement. It is necessary to have a very correct back feed of the media – this is not possible with the wider units.

Chapter 2 Set up mode

Update new firmware

To set up he printer for color option you have to download a new firmware version. If you ordered the printer together with the color option the firmware is imbedded.

To flash the new firmware please follow the steps below.



The printer is using a memory (flash ram) - the user can program from outside. The memory stores firmware and fonts - as well the barcodes. This feature gives the possibility to store new firmware in the printer without opening the cover and/or changing EPROMS.

Attention: Only the Centronics parallel interface can be used to download new firmware. If the download procedure is started – do not interrupt it – otherwise the board can be locked and only the factory is able to reset it. **Transmission of data can be done by using a COPY command - it has to be done with the parameter /B - so no additional data will be added to the transmitted data.**

A loader is programmed into the flash RAM from the factory – this is a base program. This loader is used to receive the first firmware – handling the code, barcode and fonts.

Downloading a new version

- switch in the printer – go into ONLINE mode
- send the file

  START.LDR to the printer

- the printer is reset and displays **'.LDR'**
- now it is possible to transmit the data with the different files

  V55_FONT.LDR - internal font generator
  V55_SPD.LDR - scaleable font generator
  650.LDR - firmware (TTX 650 or other)

- to finish the download

  END.LDR - finished

Example : **complete up date**

copy START.LDR/B lpt1	move printer into LDR mode
copy V55_FONT.LDR/B lpt1	fonts are transferred into flash
copy V55_SPD.LDR/B lpt1	speedo fonts are transferred into flash
copy 650.LDR/B lpt1	program TTX 650 is transferred
copy END.LDR/B lpt1	flash load is ended

program down load

copy START.LDR/B lpt1	move printer into LDR mode
copy 650.LDR/B lpt1	program TTX 650 is transferred
copy END.LDR/B lpt1	flash load is ended

font down load

copy START.LDR/B lpt1	move printer into LDR mode
copy V55_FONT.LDR/B lpt1	fonts are transferred into flash
copy V55_SPD.LDR/B lpt1	speedo fonts are transferred into flash
copy END.LDR/B lpt1	flash load is ended

Attention: If the firmware download worked well you will see during reset (pressing all 3 buttons) the new firmware version – if a C is shown after the first digit everything is OK (i.e. 1C34)

Chapter 3 Modes of operation - operation

Programming

For the use with the color option a new EASY PLUG command was designed. The #RC command is used to specify which color panel is used to print the elements after the command. This color will be used until a new #RC command or a new #ER command is detected.

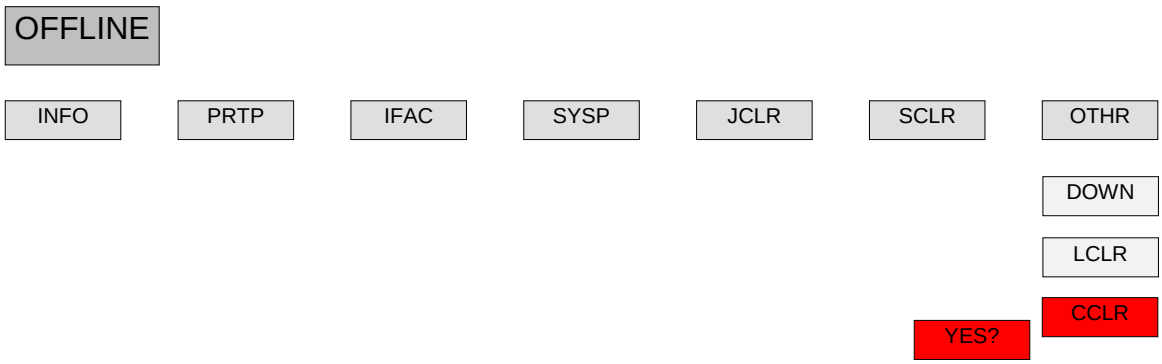
Command: **#RCn/**

n	=	0	black
	=	1	yellow
	=	2	magenta
	=	3	cyan

The #RC commands have to stay between the #ER and the #Q command. If coloured pictures should be printed or the printer drivers are used a SRAM PCMCIA card has to be used (up to 2 MB). The card is used to store the image data of the picture between transmission and printout.

Attention. The printer will not separate the picture into the three ground colours ! This has to be done outside of the printer with a colour separation program. Only EASY PLUG information or data with a #YI command can be send to the printer.

If the card is used – the card has to be a color card formatted one. This format can be done in the printer using the menu point OTHR – CCLR – YES? (see as well card manual)



After you have accepted to format – SLOT0 is checked for a card able to write on (means a SRAM PCMCIA card – not write protected). If a card is found it will be formatted – if not SLOT1 is used if a card is there.

Attention: The card will be formatted – as well if a working format is on !

Quantity of label per color field

#CP command

Syntax: **#CPa/b/**

#CP	command
a	quantity of color fields per set
b	quantity of labels printed with one color set

Calculation of b

If the printer is not in the foil save mode - b is the result out of the division – length of the color field / length of the label.

Example: field length = 100 mm, label length = 20 mm, b = 5

If the label is not printed 100% coloured – normally more then the calculated labels can be printed.

But therefore b is influenced by

quantity of elements printed on the label
print position
print speed
endless or cutted label

The #CP command is used between the #IM command and the #ER command.

Reasoned by the availability of 2 color ribbon and 3 color ribbon it is necessary to know more about the positioning of the colours on the ribbon

4 color ribbon

#RC0 : black
#RC1 : yellow
#RC2 : magenta
#RC3 : cyan

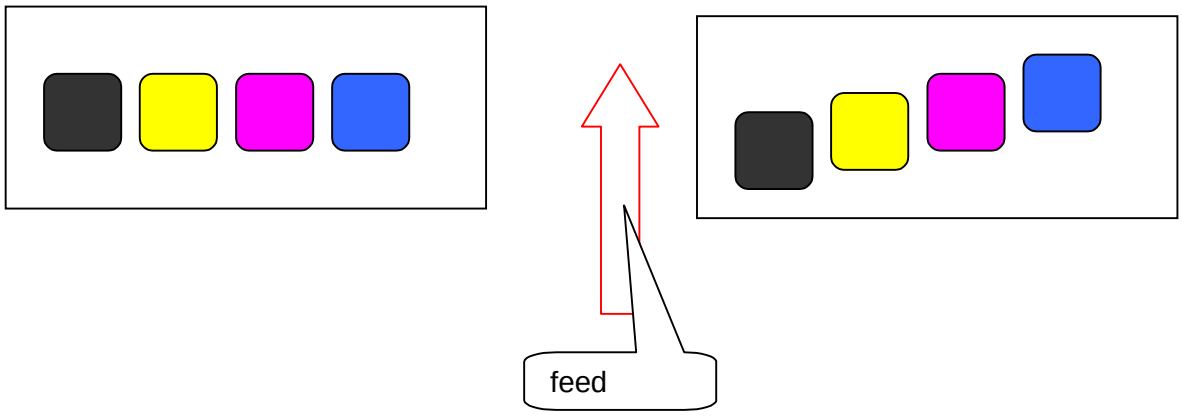
All other multi color ribbon (a<>4)

#RC0 : first color after the double stroke
#RC1 : second color after the double stroke
and so on

Offset adjustment

Given by variances in the media movement it can happen, that there is a difference in the print position of each color panel. This happens mainly with endless media (without registration gap).

Following you can see the layout position and the print position



If the shown variance is always the same there is a possibility to work around by using the menu point FBY below the point PRTP.

In steps of 0.25 mm a maximum of +/- 40 steps can be keyed in which gives you a total of 10 mm variance in both directions.

Quantity of label per ...

Given by the principal of the print process (back wards and forwards) compared to a standard single colour printer a difference in the output is there as well. Depending on the label length, print speed and used colour panel you can calculate the output as following

Output = (((print speed : label length):2):used color)

Example: 200 mm print speed
100 mm label length
4 colour

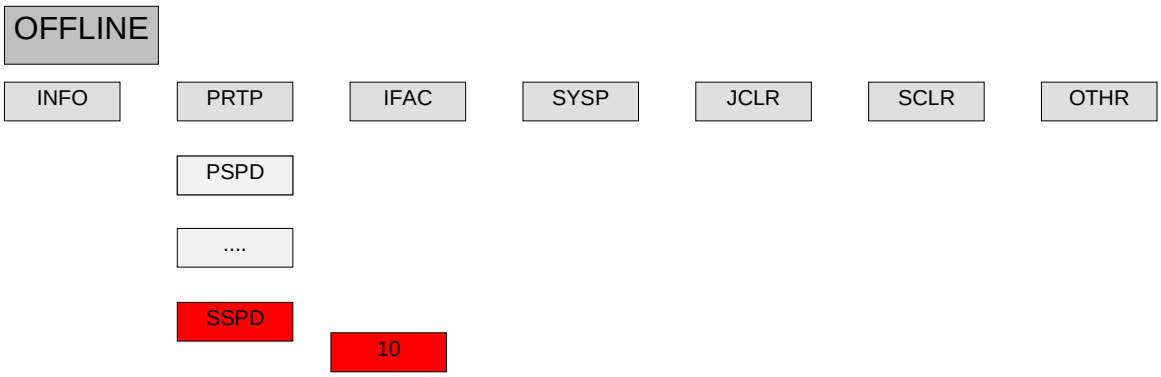
Output = (((200:100):2):4) = 0.25 label /sec

The printout of a label like above will take around 4 seconds . This is only an idea how to calculate the output. Other parameters can influence this as well – like slow down and speed up the label.

As well this can be influenced by using the parameter SSPD

This parameter can be programmed to a value between 4” and 12” and is influencing the ribbon speed (not printing) and the media back feed speed.

Reason can be that you want to get excellent print quality and set the print speed to 4 inches /sec, but the backward speed can be easily set to 10 inches.



Limitation

It is not allowed to stop the printer during a run – start a status print out – and go back to print the rest of the label if consecutive counting fields are used in the format.
The value of the fields can be influenced and the printout is not more correct!

Chapter 4 Information printout / parameter

Parameter Menu

OFFLINE

INFO	PRTP	IFAC	SYSP	JCLR	SCLR	OTHR
STA0	PSPD	PORT	EMUL			DOWN
STA1	MTYP	SPOL	NACH			LCLR
STA2	MLEN	BMOD	SENS			CCLR
STA3	MWID	<20H	PUNS			ICLR
DOT1	PUNO	BAUD	FMOD			ADJS
DOT2	BCHI	PARI	OMOD			MCHK
	UPCA	DBIT	SMOD			SCHK
	CSPD	SBIT	EXTR			PCHK
	CPOS	HAND	SGMO			FACT
	CWID	PRID	CODE			SERV
	CDIS		HRES			NULL
	ASPD		HVOF			HADJ
	ADIS		CLCK			ACSC
	MPOS		USMD			
	XPOS		LREP			
	YPOS		CSET			
	SSPD		MEND			
	GAP		SCAN			
	CMOD		SERR			
	DMOD		PEPH			

Standard / standard

Nur mit Messer / cutter only

Spender mit Applikator / dispenser with applicator

Für Spender (MPOS – auch mit Abreißkante) / dispenser only (MPOS – tear off as well)

Nur mit Scanner / scanner only

Nur mit Color Option / with color option only

Nur für Service / for service only

Status printout

Attention: Status printout are available – please refer to the limitation in chapter 3.

Status

Following status messages are the most important for the color option – all other are shown below.

ST34 no color code found

If the code is not found during printing – the printer is moving a maximum of 6 panel forwards.
If the right colour was not found Status ST34 is shown in the display.

Action: check if there is a color ribbon in the printer

check sensor using the menu point (OTHER/SCHK/CLxx)

ST35 logo does not fit to the color card

- self accepting -

Action: use a bigger card

ST36 can not find a color card or not write to

This can only happen if a #RC command follows a #YI command.

Action: use SRAM card and format as color card

check if card is write protected

ST37 #CP command sequence is not matching with the used ribbon

It is possible that the quantity of the color fields in the command is not matching with the quantity on the ribbon – or a 2 color ribbon is used – and the command is searching for field 3 like #RC3

Action: check command sequence

Example

Example: **This example will print the word GERMANY and color fields in 8 colours.**

```
#!A1
#IMS48/58
#ERN
#RC0/
#J2#T10#M1/1#YT106/0///GERMANY
#J2#T30#YL0/0/5/15

#RC1/
#J8#T10#M1/1#YT106/0///GERMANY
#J26#T10#M1/1#YT106/0///GERMANY
#J32#T10#M1/1#YT106/0///GERMANY
#J38#T10#M1/1#YT106/0///GERMANY
#J20#T30#YL0/0/5/10

#RC2/
#J14#T10#M1/1#YT106/0///GERMANY
#J26#T10#M1/1#YT106/0///GERMANY
#J32#T10#M1/1#YT106/0///GERMANY
#J44#T10#M1/1#YT106/0///GERMANY
#J15#T30#YL0/0/5/10

#RC3/
#J20#T10#M1/1#YT106/0///GERMANY
#J26#T10#M1/1#YT106/0///GERMANY
#J38#T10#M1/1#YT106/0///GERMANY
#J44#T10#M1/1#YT106/0///GERMANY
#J28#T30#YL0/0/5/10

#Q1/
```

Status reports

ST 00		ST 15	head sensor not found (system will be locked)
ST 01	NOVRAM error (factory set)	ST 16	applicator home position not found
ST 02	NOVRAM write error	ST 17	dispenser pressure roller not closed
ST 03	no material in SNGL sensor	ST 18	dispenser backing paper rewinder full
ST 04	stacker full	ST 19	applicator – touch down not found
ST 05	material end	ST 20	EASY PLUG wrong command (imedeate)
ST 06	printhead overheated	ST 21	EASY PLUG wrong command between #ER and #Q
ST 07	ribbon end	ST 22	EASY PLUG command without #ER
ST 08	gap not found	ST 23	EASY PLUG not known command
ST 09		ST 24	receive error RS 232
ST 10	ramcard error	ST 25	spooler overflow
ST 11	ramcard error	ST 26	EASY PLUG wrong size or print adjustment
ST 12		ST 27	EASY PLUG counter overflow
ST 13	barcode reading error or media broken for rewinder	ST 28	EASY PLUG field outside print area
ST 14	cut sensor not found, dispenser second feeder, nothing	ST 29	EASY PLUG logo number doesn’t exist

ST 30	EASY PLUG logo buffer to small	ST 45	
ST 31	EASY PLUG logo number error	ST 46	
ST 32	EASY PLUG postbarcode not OK	ST 47	
ST 33	EASY PLUG range command #PA to #IM wrong	ST 48	
ST 34	COLOR PANEL color code not found	ST 49	
ST 35	COLOR PANEL logo does not fit to the card	ST 50	no read of scanner
ST 36	COLOR PANEL color card not found or programmable	ST 51	scanner not programmable (system will be locked)
ST 37		ST 52	stacker full (standard)
ST 38		ST 53	
ST 39	EASY PLUG speedo error	ST 54	
ST 40	receive error RS 232	ST 55	
ST 41	receive error RS 232	ST 56	
ST 42		ST 57	
ST 43		ST 58	
ST 44	ID matrix barcode error	ST 59	acess denied for setting printer to zero

ST 60	memory allocation error (system will be locked)	ST 75	
ST 61	font allocation error (system will be locked)	ST 76	
ST 62	update or numberfield overflow	ST 77	
ST 63		ST 78	
ST 64		ST 79	
ST 65		ST 80	EASY CARD wrong name of file in #FO command
ST 66		ST 81	EASY CARD field number not found
ST 67		ST 82	EASY CARD syntax of #YT or #YB command wrong
ST 68	wrong board installed for selected peripherie option	ST 83	EASY CARD number of data field to big
ST 69	interrupt error (system stands)	ST 84	EASY CARD quantity of variable characters = 0
ST 70	TDI stepper does not respond	ST 85	EASY CARD no card found
ST 71	headstrobe checksum wrong (system will be locked)	ST 86	DATA BASE not enough space for index file
ST 72	speedo system error	ST 87	DATA BASE no possibility to build index file
ST 73	speedo scaling wrong	ST 88	DATA BASE no possibility to sort index file
ST 74		ST 89	DATA BASE barcode onformation nor found in

ST 90	database contains identical records
ST 91	barcode not readable
ST 92	
ST 93	
ST 94	
ST 95	
ST 96	EASY CARD undefined error
ST 97	EASY PLUG undefined error
ST 98	INTERFACE undefined error
ST 99	SYSTEM undefined derror
	just warning – self confirming
	must be confirmed by the user

POFF	Power OFF – printer is switched OFF
FAIL	Image card could not be formatted
SCAN	Scanner was unable to decode the information
OPEN	cover open – switch is open
LOCK	the printer is locked
DATA	data receive mode
STOP	printer in STOP mode
SNGL	printer in single start mode
WAIT	printer in wait condition
HOST	printer stopped by host
INIT	printer is initialised
DOWN	TDI table goes up
UP	TDI table goes down
.LDR	printer in loader mode
.EMU	printer in emulation mode
.SYS	printer in system mode
SORT	data base information is sorted
----	printer was switched on to early after power down
LOAD	barcodes loaded from card

Chapter 5 maintenance, cleaning and service

Maintenance and cleaning

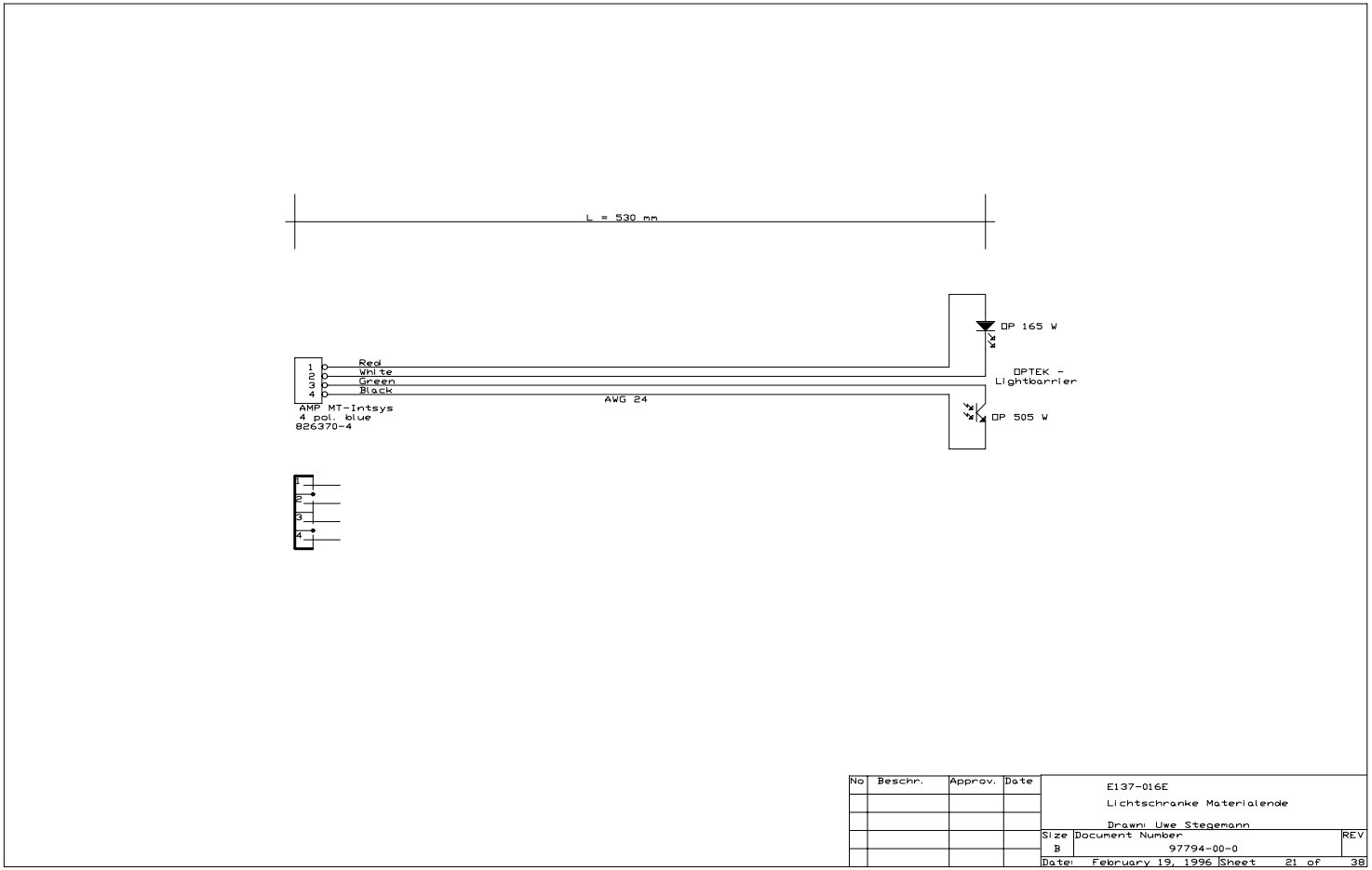
Clean as a standard printer – sometimes the sensor should be cleaned from paper dust.

Service

No special service is necessary.

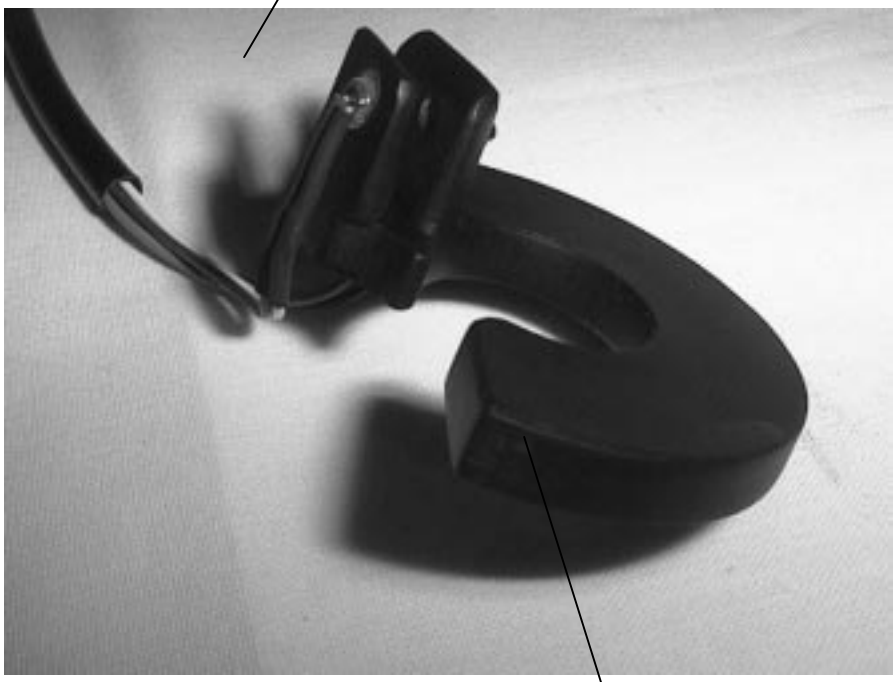
Chapter 6 diagram, component, wiring

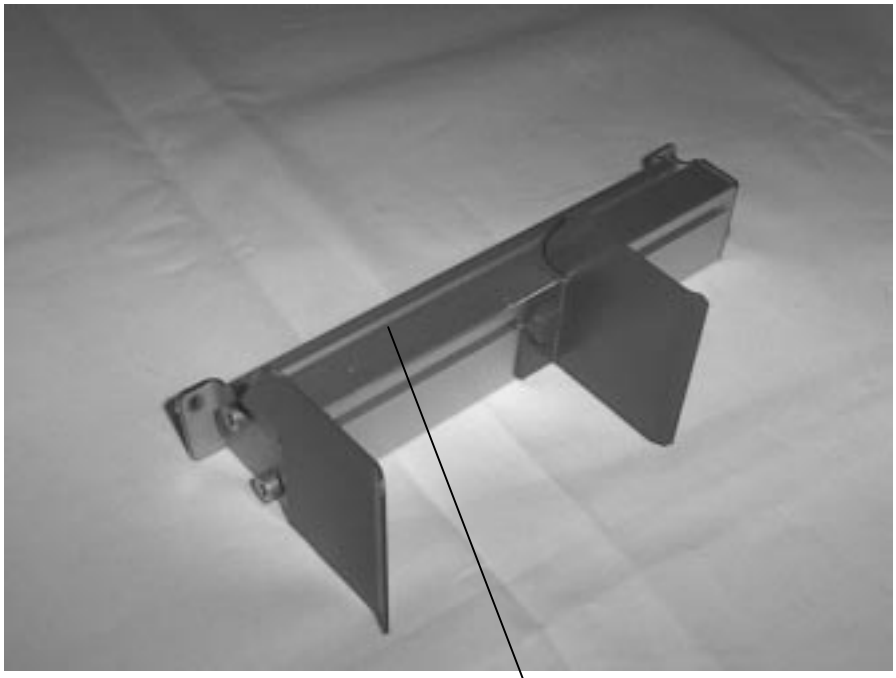
Color Sensor Cable



Chapter 7 Appendix

Spare parts


Part Number : A0221-xx-1 TTX 450
A0222-xx-1 TTX 650
A0223-xx-1 TTX 950
Bezeichnung : Color Option ZSB
Identification : color option assy.
Part Number : A0145-xx-2
Bezeichnung : ZSB Sensor Color Option
Identification : color option sensor assy.



Part Number : A0135-xx-1 TTX 450
A0136-xx-1 TTX 650
A0137-xx-1 TTX 950

Bezeichnung : ZSB Refeed Guiding
Identification : refeed guiding assy.

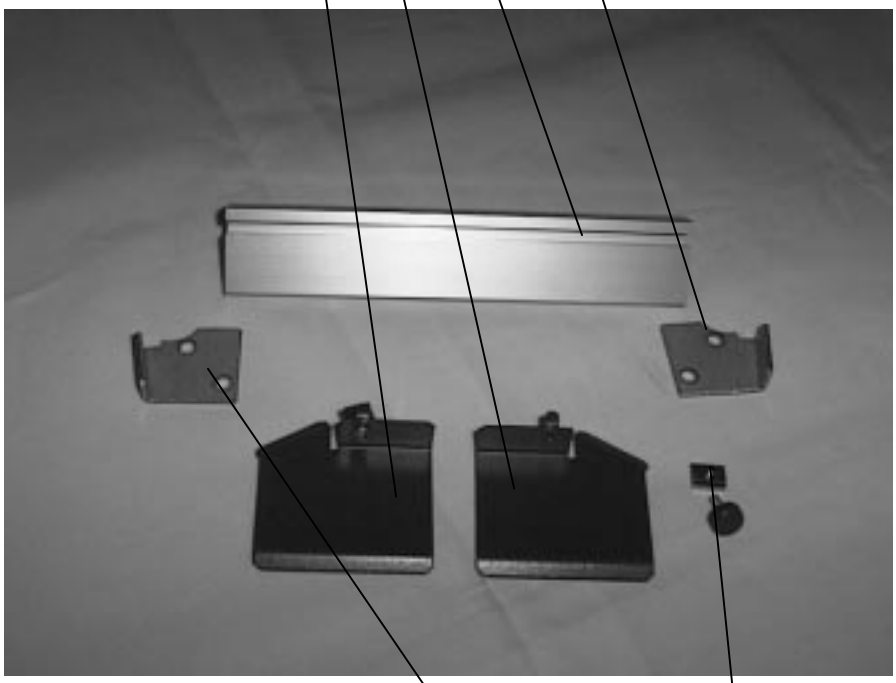
Part Number : A0142-xx-0
Bezeichnung : äußere Befestigung
Identification : outer mounting part

Part Number : A0138-xx-0 TTX 450
A0139-xx-0 TTX650
A0140-xx-0 TTX 950

Bezeichnung : Verschiebeprofil
Identification : sliding profil

Part Number : A0144-xx-0
Bezeichnung : äußere Führung
Identification : outer guiding

Part Number : A0143-xx-0
Bezeichnung : innere Führung
Identification : inner guiding



Part Number : 98774-xx-0
Bezeichnung : Nut Mutter
Identification : guiding nut

Part Number : A0141-xx-0
Bezeichnung : innere Befestigung
Identification : inner mounting part

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